

Study of THz radiation parameters in Co/WSe₂, IrMn₃/Co and IrMn₃/Co/WSe₂ structures

Lebedeva E D[®], Buryakov A M, Avdeev P Yu,
Gorbatova A V and Bezikonnyi N V

MIREA—Russian Technological University, Prospekt Vernadskogo 78, Moscow 119454, Russia

® caterina-lebedewa2015@yandex.ru

In the present work, the parameters of spintronic terahertz (THz) emitters based on Co/WSe₂, IrMn₃/Co and IrMn₃/Co/WSe₂ layers deposited on a sapphire substrate were investigated. The samples of the spintronic emitters were created by magnetron sputtering. The parameters of the THz emitters were investigated using a standard technique of time-resolved terahertz spectroscopy, in transmission geometry [1]. An amplified Ti:Sa-based femtosecond laser system was used for pumping, which provided a 35 fs laser pulse with a repetition rate of 3 kHz at a central wavelength of 800 nm [2]. The efficiency of THz radiation generation was evaluated. Frequency spectra of THz emitters were obtained by the Fourier-transformation method. The possibility of controlling the polarization of THz radiation by changing the magnetization of the sample was shown. The study was supported by the Russian Science Foundation (grant No. 21-79-10353) and the Ministry of Science and Higher Education of the Russian Federation (project No. 075-15-2022-1131).

- [1] Khusyainov D, Ovcharenko S, Gaponov M, Buryakov A, Klimov A, Tiercelin N, Pernod P, Nozdrin V, Mishina E, Sigov A *et al* 2021 *Sci. Rep.* **11** 697
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